RAILROAD STATISTICS.

Scarcely one man in a thousand has a correct idea of the magnitude of railroad operations in this country. Not merely the capital invested (and in some cases wasted), but the daily operations, the army of men employed, the amount of power used, the number and strength of the locomotives, the number and tunnage of freight and passenger cars, and the effect that railroads have upon the country.

We were forcibly struck with this in witnessing the ease with which 30,000 or 40,000 people were concentrated at the late fair at Elmira, which led us into a train of reflection and inquiry; and now we propose to offer a few illustrations upon this great subject by an exhibit of the New-York and Erie road, because this is one of the longest single roads and largest corporations in the world, and at present is probably doing a greater amount of business in freight than any other road of the same length ever built.

But more than all were we incited to learn the facts now given to the reader, from accidentally hearing a talk among the officials, at the great headquarters of this army, by which we learned that they could tell, at every moment of every day, where every locomotive and every car was upon the road, and whether they were in service, or in ordinary, or at the repair shops, or whether if moving, who was moving them, and which way, and whether they were loaded or empty.

It did seem to us a sort of knowledge that must require a little spiritual agency, but we found it only required the agency of rules and discipline, and perfect order of business, aided by the telegraph. That was all the spiritual agency.

Then we asked leave to look at the books, and then all was plain—all explained.

There are near 3,000 cars, and over 200 locomotives now in use on the road.

There are all regularly numbered, and by those numbers entered upon a book on the left side of a page, which is headed with the dates one, two, three, four, &c., of all the days in a month. Then all the stations are numbered and known by the numbers. Now, suppose we want to find or follow the progress of car No. 2,167 from station number one, which is Piermont, through to Dunkirk, which is number seventy-four. Suppose the agent at Dunkirk writes to inquire why certain freight has not been forwarded. The agent here replies it has been; it was loaded, Sept. 7, at Piermont, in car No. 2,167. Then where is that car? A glance at the book shows. Opposite No. 2,167, under date Sept. 7, we find the figure 1. That shows that this particular car was there that day. It must have left in the evening, because we find no other number under that date; but on the 8th we find by the numbers entered that it was at half a dozen other stations.

We follow up the numbers till we find on the 9th it was at number thirty-four, which stands for Susquehanna, and there stands car No. 2,167. What is it doing there? We refer to telegraph reports of that day and find that John Smith, conductor of train No. —, "arrived at this station this morning, and the examiner found the axle of forward trucks of car No. 2,167 defective and very dangerous. Switched out for repair."

That is all right, but why has it not been switched in again?

Click, click, click, goes the telegraph, and back comes the answer:

"Car No. 2,167 repaired same day, and Peter Stokes ordered to put it in night train west. Reports that he understood east, and sent it that way an hour since."

Click, click, click, again, and car No. 2,167 goes about face at the next station, and Peter Stokes is ordered up to the superintendent's office, and then, on satisfactory proof that the order was correctly given and wrongfully executed, he is discharged.

So every car can be closely tracked, and every act of carelessness ascertained and corrected on the instant.

Every car is not separately reported at each station, but every train is; and in another book there is a record of every train started, with every car and contents in the train; and what locomotive, and who is the conductor and engineer; and how much each car weighs, and how much weight it is loaded with; and how fast it runs, and how much it costs per tun per mile to draw the load; and if any cars are added on the road it is known when and where; and if any are left, when, and where, and why. If any one leaves loaded cars where he should not, he will be likely to be left off of the pay roll, and if he don't take on and haul cars when ordered he will be hauled up at the next station, and ordered to give his train in charge of another man. Disobedience of orders is not tolerated on this road, and upon that depends its safety.

But the reader, we doubt not, before proceeding farther would like to glance at the history of this road.

In 1825 the legislature directed a survey of a State road from Lake Erie to the Hudson river, through the southern tier of counties, but nothing was done but talk, until April, 1832, when the New-York and Erie railroad company was chartered. De Witt Clinton, Jr., a United States engineer, made a survey of the route, and in August, 1833, the company organized, with Eleazer Lord president.

In 1834 another survey was made, by Benjamin Wright, and in 1835 the company was reorganized, with James G. King president, and over two millions of stock subscribed, and contracts made for the most difficult part along the Delaware river.

In making surveys it was ascertained that the road could not be built without crossing the Pennsylvania line, except at an expense beyond the means of the company. Notwithstanding the very great benefit it would be to that part of the State touched by the road, the jealousy of some of the politicians, that it would benefit New-York more than Philadelphia, prompted that State to refuse the application, except upon condition that the company should *pay* the State the enormous rent of $10,000 a year for the privilege of crossing her line and cutting through some rocky mountains.

Necessity compelled the company to submit to these conditions, almost as hard as the rocks they had to cut through where they traverse that State along the jagged points of rocks that jut into the Delaware river.

Almost equally hard was the restriction placed upon the company by the Legislature of New-York, by which they were confined to the State at the eastern terminus of the road, instead of passing into New-Jersey and reaching this city by the shortest route, cheapest grade, and altogether most natural way, and—as has subsequently been proved—only way in which the company could hope to maintain a chance for a proper share in the passenger business.

After a deal of trouble about the terminus at both ends the road was finally located from Piermont, twenty-four miles above the city, to Dunkirk, forty miles west of Buffalo.

The first iron was purchased in 1840, but in 1842 the company were so embarrassed that they could not go on, and for three years the prospect of completing the road was very dark. In 1845 only 53 miles had been completed, but on the 14th of May, 1851, there was a continuous line of rails from Piermont to Dunkirk. The length of rails between these two points is 445 miles, and upon 166 miles of the distance there is a double track—that is, from Piermont to Clarkstown, nine miles; from Suffern to Port Jervis, fifty-six miles; from Deposit to the junction of Canandaigua and Elmira railroad, one mile west of Elmira, 101 miles.

This, including switches, turn-outs, and tracks at stations for storage-room for empty cars, makes a distance equivalent to a single track railway on this main line of 707 miles.

In addition to this, the company own, by perpetual lease, the line from Jersey City to Suffern, where it joins the main line, eighteen miles from Piermont. This line is thirty-two miles long, of which sixteen miles are double track. The company also own a branch to Newburgh, eighteen miles long.

The Newburgh branch connects with the main line at Chester, forty-one miles west of Piermont and 56½ miles from Jersey City, making seventy five miles by that route from New-York to Newburgh.

There are also several other roads, though owned by other companies, that are properly branches of the Erie road, as they are in a measure dependent upon it, as well as serving as feeders.

Going west, the first of these branch-roads unites at Great Bend, on the Susquehanna, 200 miles from this city. This road extends to Scranton, Penn., fifty miles, and brings down large quantities of coal, much of which is shipped on the Chenango canal at Binghamton, 214 miles from New-York. There is a road from Binghamton to Syracuse, seventy-nine miles.

From Owego, 236 miles from New-York, there is a road to Ithaca, twenty-eight miles north. From Elmira, 273 miles from New-York, there is a road to Canandaigua, sixty-four miles, and to Niagara Falls, 162 miles. There is also a road south from Elmira to Philadelphia, the same distance as to New-York. From Corning, 291 miles from New-York, there is a road to Batavia, ninety miles, and forty-five miles farther to Buffalo. Another road from Corning to Blossburg, Pa., forty miles.

From Hornellsville, 331 miles from New York, there is a road ninety-one miles to Buffalo, which is now operated by the Erie company, so that cars run through from Buffalo to Jersey City, 422 miles, without changing.

These roads, as well as the Lake Shore road from Buffalo to Erie and westward, all contribute to the business of the Erie road, and hence its magnitude.

The length of all the tracks of main road and branches owned by the company, not including those of other companies, would make a single-track road 755 miles long.

It is not easy to state the cost of the road track separate from the rolling stock and other property of the road; but there are single miles that cost to grade and get ready for the iron no less than $170,000 per mile; and there is one bridge, that over the Starucca creek near the village of Susquehanna, which is built upon seventeen stone arches, the highest of which is 100 feet, and the entire length of the bridge is sixteen hundred feet, and the cost $320,000 dollars.

In the same vicinity there is another bridge across a mountain gorge, only 276 feet in length, but 180 feet in hight.

The most expensive part of the grading for any considerable distance was that along the Delaware river, where the bed of the road is sometimes constructed upon a ledge formed by blasting off a portion of the almost perpendicular mountain side, or cutting away the hard rocky points that project into the river to such an extent that it seems almost incredible to those who know the character of the country and the extent of the obstructions, that a roadway could be formed by any practicable amount of expenditure.

Another very expensive part of the road was the forced termination at Piermont, where a million of money was wasted that might have been much better expended upon a terminus at this city, where the company were finally forced to come.

The distance from Jersey City to Dunkirk is 459 miles, and this is run by the morning and evening express trains in sixteen hours. Beside the express trains there is a through train carrying the mail leaving at 8½ o'clock A. M. and stopping over night at Owego, and an emigrant train that leaves every evening. Beside these there are accommodation trains, way trains, milk trains, stock trains and freight trains enough to confuse one to think of, yet all work with regularity.

To enable our readers to form some opinion of the magnitude of railroad operations, we have been at some pains to ascertain the number of engines and cars on the Erie road, and have coupled them all in one train, in imagination, which we think will surprise every one in its extent.

The following is the number now in use, as near as it can be ascertained, as slight changes are made every day.

The power consists of the almost incredible number of 203 locomotives.

About one-third of these are employed to move passenger trains.

First-class passenger cars...	102	Platform freight-cars......	1180
Second class passenger cars	23	Cattle freight cars.........	200
Baggage, mail, and express	48	Trucks for lumber, &c.....	100
Box freight-cars............	1222		
Total number of locomotives and cars of all kinds......			3158

If these were coupled together in one train, it would reach from Jersey City to Godwinville above Paterson, a distance of twenty-one miles, and would be able to seat 7,800 passengers, and also to carry a load of freight that may be imagined to contain the following articles, if the cars were all loaded equally:

Barrels of flour..................................	33,488
Bushels of wheat..................................	93,186
Bushels of oats and corn..........................	129,755
Gallons of milk...................................	554,000
Number of beef cattle (averaging 15 hd. to a car)	4,185
Number of sheep (averaging 175 head to a car).	48,825
Number of hogs (175 to a car)....................	48,825
Tuns of merchandise (8 tuns to a car)	2,232
Tuns of coal (10 tuns to a car)..................	2,790
Lumber (25 cwt. per 1 M)....................feet	2,232,000

Or in case of emergency, this road, with this power, would be able to transport from Lake Erie to this city in one day 150,000 soldiers. And this is only one out of eight roads centering in this city that could be used for the same purpose. Verily our railroads, in place of fortifications, are stronger than all Sevastopol.

The cost of the equipment of this and other roads may be calculated from the following statement:

The cost of a first-class locomotive which weighs thirty tuns, and is capable of drawing over the whole road in sixteen hours a train of eighteen cars with 1,100 passengers, is about $12,000.

The cost of a first class freight locomotive, capable of trucking 600 tuns of dead weight in freight cars, is about the same price though it weighs some two tuns heavier.

The cost of the smallest locomotives in use is $6,000 to $8,000.

A first-class passenger car with all the modern improvements of ventilation and warming, will cost $3,000.

A second-rate car, $2,500, and a second-class passenger car, $1,800.

Freight cars will average about $600 each.

The iron rails in use on this road are 56 lbs. to 74 lbs. per yard, and at present prices would cost $4 per yard, or $7,000 per mile for a single track of the lightest rail.

But after all, the most curious part of the whole is the number of men required to keep the machinery in operation. We think we shall astonish many persons by telling them that the Erie railroad company have now upon their pay rolls not less than FIVE THOUSAND employees of all grades—to wit: in the various offices of president, secretary, superintendent, auditor, treasurer, freight agent, and printing office in the building of the company, foot of Duane and Reade streets, there are 60 persons employed.

There are twelve division superintendents and assistants in the offices at Jersey City, Port Jervis, Owego, and Dunkirk.

There are in the machine shops at Piermont 225; at Susquehannah 200; at Dunkirk 115; and 130 car repairers.

There are forty four passenger train conductors, and, much to their credit and respectable appearance, all in a neat uniform.

There are eighty freight conductors; 450 engineers and firemen, and 400 brakemen and baggage men.

There are ninety ticket sellers and station agents, and sixty telegraph agents. There are about 1,000 laborers and switchmen, and some 800 track repairers, averaging about one and a half man to the mile constantly engaged to keep the road in order.

The pay-roll of this army is not less than $125,000 a month, or $1,500,000 a year.

We spoke of the printing office. The business of this road requires a constant force of four compositors, and the use of half-a dozen presses, great and small; one of which is constantly at work printing tickets, which are never used but once, and are then returned to the auditor's office as checks upon the parties who sold them. There is one large room in the building devoted to the storage of printed blank forms, which are very numerous, in use by the company. These are necessary where everything is conducted according to nature's first law—order

Of the advantage of telegraphs on railroads, we have already given our opinion; but its operation and daily use will be better understood by copying a few of the hourly dispatches sent to the office of the General Superintendent. Here is one:

"TELEGRAPH OFFICE, N. Y. Sept. 28, 1855—4:12 A. M.

"To D. C. McCALLUM, General Superintendent—SIR: The following are the latest reports of trains received at this office: Night express west, Owego, 32' late—detained 20' at Great Bend, by a hot journal under tender of engine No. 24, and 10' at Burlington, changing baggage. Cincinnati express, Elmira, on time, 5:12 A. M. Cincinnati express, Owego, 5' late. Night express, Narrowsburg, on time, 5:31 A. M. New-York express, Dunkirk, 25' late—detained for train from State line, 6:19 A. M. Emigrant, Dunkirk, 10' late."

Here is another later in the day:

"TELEGRAPH OFFICE, NEW-YORK, Sept. 28, 1855—1:14 P. M.

"To D. C. McCALLUM, General Superintendent—SIR: The following are the latest reports of trains received at this office: Mail west—New-York express at Canisteo, on time; Rochester accommodation at Owego, 10' late; night express west at Dunkirk, on time; mail at Alford, on time; New-York express at Little Valley, 15' late—detained at Tremont by night express west and mail express east; mail east at Little Valley, 10' late; immigrant at Great Bend, 12' late; New-York express at Addison, on time; Rochester accommodation at Campville 28' late—detained taking on freight."

Another report that came in while we were present one day reported that the night express east was detained twelve minutes at Hale's Eddy by freight No. 2.

The question was immediately asked, What was the difficulty with freight No. 2 this morning, detaining night express east twelve minutes at Hale's Eddy?

Answer.—No. 2, with thirty-five loaded cars, left Deposit intending to switch for night express east at Hale's Eddy, but in approaching the switch the engine was crowded by and was not able to back up; conductor, fearing that he would be in night express train time before reaching Dickinson's switch, left a flagman at Hale's Eddy to give express train notice; night express in running slow lost the twelve minutes, but passed freight No. 2, all right, at Dickinson's.

Then the telegraph ordered the conductor of freight train No. 2 to explain why he allowed his train to run so fast as to be crowded by the proper turn-out, contrary to positive orders. If he failed to give satisfactory reasons at once he would be suspended till he could do so.

Such is discipline on this road—such it should be on every road—and then travelers would feel a degree of safety that they do not now enjoy. But with such an immense quantity of rolling stock, and such a length of road, what would be the condition of things without discipline, order, and the telegraph!

NEW INVENTIONS AT THE AMERICAN INSTITUTE FAIR.

The elevated railroad, of which we predicted the finishing near the close of the year, seems to be still a mere framework of handsome lumber; an exhibition in itself neither novel nor entertaining, but still not without instruction. It seems to exist, a silent and eloquent commentary on the parable of the man who began to build but was unable to finish.

Among the inventions not yet noticed, the one most novel in its inception and remarkable in its operation is the Hydraulic Rock Drill, by J. Echols of Columbus, Georgia. The drill-rod is provided with two cup-shaped collars, the hollow sides facing toward each other. A line of hose leads from an elevated reservoir and throws a stream first upward against the upper cup, then downward against the lower one. The force of the water thus applied keeps the drill continually leaping with great force; and considerable ingenuity is displayed in working out the details so as to secure the fullest effect of the water, properly rotate the drill, and make the position of the cups and of all the parts self-adjusting as the drill penetrates into the rock. The water flies about merrily within the small glass room in which it is inclosed, but this may in practice be avoided by giving the parts a slightly different form, and inclosing the whole in a suitable ring or case. The simplicity, lightness and portability of this machine constitute its chief advantages, and these are so important as to make practicable the employment of this drill, even where a steam pump must be employed to impel the water. There is a loss of effect in the transmission of power in this manner, similar in kind to that of using water by an undershot or a turbine wheel; but, rightly managed, this loss may be reduced to a very small per centage, and the difference between the stretching a hose across a ledge, and the arranging of cumbrous machinery with belting or shafting, is sufficiently great to atone for many inconveniences.

Heman Gardiner of this city exhibits a model of a quartz-crusher which seems adapted to solve the often attempted problem of destroying the rock instead of the machine. A half score or more of crushers are in mind at this moment all showing at first glance either a liability to break if for one moment overtaxed, or a certainty of continually wearing away the iron and working abominally slow. Gardiner's crushes by a ball rolling freely in a basin, yet allows the basin to rest directly upon solid masonry. This crusher discharges the material, when finely broken, into grinding-mills which finish the operation and allow the basin to work a fresh supply. We consider this crusher far preferable to anything ever before on the carpet, as it seems to entirely avoid the tendency to vibration and jarring which has heretofore proved so destructive, and allows the accumulation of any quantity of the hardest material in the basin without endangering its integrity.

A brace rule—a kind of "ready reckoner" for calculating lengths and determining bevels for braces in carpentry—seems worthy of the highest admiration. It is a square with a slotted strip of iron adjustable in any diagonal position as a brace, and by the aid of suitable fixtures gives by inspection every data required. The same strip and fixtures serve also as a strong and durable beam compass when required.

A door lock, by William H. Butler of this city, combining the safety of a bank lock with the simplicity of a latch-string, justly attracts a high degree of attention. It opens from the inside by a simple pull on the knob without straining or soiling the most delicate kid. On the street side the key-hole is a narrow slit hardly large enough to admit a fine wire, and the key is a small plate of thin metal thrust in directly without turning. The end of the key is shaped into rectangular notches of unequal depth, and presses upon six or more tumblers, each of which must be depressed to a certain depth before "the bolt" will move. Strictly speaking, no bolt is employed in this lock, the fastening being made by a strong horizontal wheel of small diameter, containing a large cavity, which embraces a corresponding fixture in the door-frame and holds on to it like a lawyer to his client's purse. It is called the rotary lock, and appears the strongest, the most easily operated with a key, and the most difficult to work without that appendage of any we have ever examined. The key is about the size and thickness of a two-shilling piece.

J. S. Robbins of San Francisco is the patentee of a novel rudder exhibited near the center of the ground floor. There are, in fact, two rudders, one behind the other; the one being reversed in position, the blade going before the rudder-post. These two are provided with levers and links at the top, so that both work together, and the tendency of one to yield in one direction to a sea or to any other disturbing force is completely counteracted by the other. The increased length fore-and-aft will, however, be a serious objection to its introduction.

H. Waterbury of Bridgeport, Conn., exhibits a model of a dust controller, consisting of a continuous platform suspended beneath the cars and engine to prevent the rise of the disturbed particles. W. E. Milligan exhibits a style of car seat, one half of which may be reversed without disturbing the other, thus make a *tête-à-tête* if desired; and Albert M. Smith exhibits a car seat, the back of which may be raised bodily and placed in the right position for sleeping without the addition of a head rest of any kind.

J. K. Fisher exhibits his rough-looking, badly constructed and worse preserved steam-carriage for common and park roads, with various really fine pictures of better ones. This man certainly deserves the premium for his tenacious adherence to this project. Mr. F. is an exceedingly well-informed amateur, and his carriage differs from the ancient attempts to propel on common roads by this agent chiefly in the ingenious application of springs. Springs reduce the effect of inequalities and make a rough way practically smooth, and Mr. Fisher has developed the best plan yet devised for applying them to carriages thus impelled. With more *practical* skill this artist-engineer may yet surprise the world.

Messrs. Stoss and Ferguson, two young mechanics of Troy, N. Y., are the inventors and patentees of a novel valve motion for steam-engines, exhibited in actual operation, although only by a small model. The valve (a slide) receives a jerking motion somewhat like those given by the cut-off cams in many of the western slide-valve engines. The eccentric, used in England and in our eastern States, gives the valve a smooth and moderate motion, while the cams knock it about with some violence; but the effect of the latter on the use of the steam is decidedly better. The cam, properly constructed and applied, gives the valve a half throw at some intermediate point in the stroke, finishing the throw as the piston reaches the end of the cylinder. This half-throw cuts off the admission of steam, and cams may be shaped so as to induce this movement as early in the stroke as desired, but the point can never be subsequently adjusted except by substituting a different cam. The device under consideration accomplishes this adjustment by simply turning a screw, and thus the cam motion is attained, and the point of cut-off at the same time varied at will. This is accomplished by taking the motion from the cross-head. The rock-shaft is upright instead of horizontal, and two arms which project therefrom in a line nearly parallel to the piston-rod are worked by movable inclined planes on the cross-head, to cut off at any point desired. No lead nor compression is obtained from valves thus worked.

NEW PUBLICATIONS.

EOLOPOESIS—AMERICAN REJECTED ADDRESSES. 12mo., pp. 240. J. C. Derby.

After the real Simon Pure "Rejected Addresses," with which everybody is familiar from the geniuses of the Smith family, it is ill advised to provoke comparison by any attempt in the same line. No subsequent production could hope for the good luck of equaling the original, while any imitations of an inferior quality would hardly receive justice for their actual merits. Several of the parodies in this volume are decided failures, particularly the felonious outrage on Longfellow. Bryant and Halleck are hit off with better success, and Whittier and Saxe must acknowledge that the profane writer has caught something of their "trick." The most characteristic piece in the volume is "The Unseen," in which the admirers of Emerson will find a not ill natured caricature of their favorite bard. Here are a few of the irreverent stanzas:

On the world's broad effulgence
  Man opens his eyes,
The scene spreads before him
  Its fields and its skies.
To earth and to heaven
  He pushes his glance,
He bores the molecule,
  He probes the expanse.

The universe looms up,
  An ocean of light,
And worlds that are blazing
  Seem made for his sight.
Let space and let darkness
  Rebuke his pretense—
The *seen* is but little,
  The *unseen* immense.

The vast orbs of heaven
  Seem rolling through air,
But what they are made of
  They fail to declare.
Man gazes down earthward
  With scrutiny nice,
But to see through a millstone
  Is past his device.

Unseen, under ground,
  Living essences clash.
The roots of the oak
  Meet the roots of the ash—
The prize of their combat
  An atom of soil—
They wrestle and struggle
  Till one takes the spoil.
* * * * *

Eternal is motion,
  Eternal is rest;
Which started the foremost
  Will never be guessed.
Was the universe one lamp,
  What could it move by?
Or, resting at anchor,
  Say, where did it lie?

Unspeakable nature
  Our wonder may fill,
But chaos before was
  More wonderful still.
I like this same chaos,
  Which nobody knows;
I'd give more to see it
  Than most of your shows.

Thrice wonderful chaos!
  Neglected too long,
I call thee to order,
  I give thee my song.
Did silence chaotic
  Brood over thy rest?
Or storms, more despotic,
  Convulse thy deep breast?

Wast thou formed out of matter,
  Or measured from space?
Did a top and a bottom
  Thy outline deface?
Wast thou made up of atoms,
  When atoms were not?
Were those atoms attractive,
  Repulsive, or what?

Inscrutable chaos,
  I groan on thy name;
I dive thy abysses,
  And come up the same;
The depths of thy darkness
  Have uttered no sound;
Thy tongue, if thou hadst one,
  Creation has drowned.
* * * * *

Man's heart is a bell—
  Lord Byron has said it;
Yet farther inquiry
  Proves more to its credit.
Like a pump in a shipwreck
  It labors to save;
Its strokes keep us floating
  From cradle to grave.

Yet this heart is a problem,
  A paradox deep;
Unseen are its movements,
  Unmeasured its leap;
It bounds back to kindness,
  Recoils back in hate,
Exults with its passion,
  Or breaks with its fate.

Mysterious heart,
  Of its fortune the play,
Exchanged for another,
  And oft thrown away;
Pierced through with sharp arrows,
  Cut into with knives,
Unseen it still pulsates,
  Unwished it survives.

The rain falleth downwards
  The ocean to meet;
The blood courseth roundwards
  Its fountain to greet;
Space, matter, and moonshine,
  In eddies are whirled;
Their circumgyrations
  Give laws to the world.

Peremptory Nature
  Keeps all things in order;
Birds mount in the air, and
  Fish swim in the water.
The bright rhododendron
  Flames up to the sky;
Appropriate pigweed
  Creeps under the sty.

Roll on, orbs of heaven;
  We keep you in view;
Your truth is unchanging,
  Your changes are true.
Let man, struggling onward,
  His destiny gain;
When pain shall be pleasure,
  And pleasure be pain.

Mr. Emerson can well afford to be made the subject of a mischievous parody, while his defiance of conventional æsthetics presents an irresistible temptation to the indulgence of an occasional fantastic witticism at his expense.

A VISIT TO INDIA, CHINA AND JAPAN, IN THE YEAR 1853: By BAYARD TAYLOR. 12mo., pp. 539. G. P. Putnam & Co.

In this volume we have the completion of the record of travel which, during two years and a half, was performed by Bayard Taylor in Africa and different countries of the East. It embraces his tour in India, China, Japan and the Loo-Choo and Bonin islands, with notices of his homeward voyage around the Cape of Good Hope. A considerable portion of its contents has already appeared in the columns of this journal, although in the latter part of the volume we find several chapters which will be new to our readers, describing some of the most interesting scenes that have occurred in the manifold experience of the writer. They are marked by his characteristic frankness of narrative, simplicity of purpose, abundance of information, and quiet dignity of style. Without indulging in the overwrought vivacity or imaginative flights of many popular tourists, he presents a fresh and manly account of his adventures, a lively description of local and personal peculiarities that fall in his way, and a course of intelligent comment on foreign scenes, which will give his writings a high and permanent value for future reference.

From his spirited descriptions of Chinese life, which occupy a large space in the latter part of the volume, we take two or three interesting sketches:

CHINESE FLORAL EXHIBITION.

One day I attended a native horticultural exhibition, which was held in an old temple within the walls. The open courts of the building were filled with rows of flowering plants, in earthern pots and vases, which were also arranged in circles around some weak fountains in the center. There were some fine specimens of the man-tan, or peony, white, pink and crimson, and with an odor very similar to that of the rose; but the most admired flower seemed to be the lan-whei, a bulbous water-plant, with a blossom resembling that of the orchids in form, yet of a dirty yellowish-green hue. The great aim of the Chinese florist is to produce something as much unlike nature as possible, and thus this blossom, which for aught I know may be pure white, or yellow, in its native state, is changed into a sickly, mongrel color, as if it were afflicted with a vegetable jaundice or leprosy. There was a crowd of enthusiastic admirers around each of the ugliest specimens, and I was told that one plant, which was absolutely loathsome and repulsive in its appearance, was valued at three hundred dollars. The only taste which the Chinese exhibit to any degree is a love of the monstrous. That sentiment of harmony which throbbed like a musical rhythm through the life of the Greeks, never looked out of their oblique eyes. Their music is a dreadful discord; their language is composed of nasals and consonants, they admire whatever is distorted or unnatural, and the wider its divergence from its original beauty or symmetry the greater is their delight.

CHINESE MORALITY.

This mental idiosyncrasy includes a moral one of similar character. It is my deliberate opinion that the Chinese are morally the most debased people on the face of the earth. Forms of vice which in other countries are barely named are in China so common that they excite no comment among the natives. They constitute the surface-level, and below them there are deeps on deeps of depravity so shocking and horrible that their character cannot even be hinted. There are some dark shadows in human nature which we naturally shrink from penetrating, and I made no attempt to collect information of this kind; but there was enough in the things which I could not avoid seeing and hearing—which are brought almost daily to the notice of every foreign resident—to inspire me with a powerful aversion to the Chinese race. Their touch is pollution, and harsh as the opinion may seem, justice to our own race demands that they should not be allowed to settle on our soil. Science may have lost something, but mankind has gained by the exclusive policy which has governed China during the past centuries.

CHINESE DINNER.

Among these festivities the most notable was a Chinese dinner which Col. Marshall gave at the consulate. The building was in a blaze of lanterns and flowers. An arched avenue of colored lights led from the gate to the door, where the visitor ascended between a double row of fragrant white and crimson *mou-tans* to the first story. Here the quaint silk lanterns were redoubled; curious baskets and urns of grass and shells, filled with flowers, were suspended from the ceiling, and the dining-room, handsomely draped with flags, contained a veritable bower, or arbor of greenery enshrining the American eagle. The dinner was prepared with great care, not only the Taou-tai's silver cups and chopsticks, but even his cook having been borrowed for the occasion. The dishes were numerous and palatable, but hardly substantial enough for a civilized taste. They were mostly soups, and some of them were distinguished by very peculiar flavors, which I found difficult to analyze. The choicest dishes were birds'-nest soup, sharks' fins, and a dark stringy substance, which the Taou-tai said he had procured from Pekin, at great expense. The dinner was followed by a grand ball, and a supper in the European style.

The hope of visiting Japan under favorable circumstances prompted Bayard Taylor to apply for a berth in the United States Expedition under Commodore Perry. His extemporaneous entering into the naval service gives occasion to a lively piece of narrative.

JOINING THE NAVY.

I had extended my travels to China with a strong hope of being able to accompany the expedition to Japan. On the arrival of Commodore Perry I learned that very strict orders had been issued by the Navy department against the admission on board of any of the vessels of any person not attached to the service and subject to its regulations. Capt. Buchanan, who had no clerk and was justly entitled to one, very kindly proposed that I should go in that capacity; but as there were two vacancies in the rank of master's-mate which the commodore had power to fill, and as my willingness to enter the service temporarily removed the only objection he had urged, I decided to take the latter chance. I therefore signed an article of allegiance, and became an officer of very moderate rank, with unlimited respect for my superiors and the reverse for my inferiors. This enlistment, which I most gladly and readily made, rendered me subject to all the regulations of the Navy department—especially to that order promulgated for the benefit of the officers of the expedition which obliged them to give up to the department every journal, note, sketch or observation of any kind made during the cruise. I therefore closed my old journal, and commenced a new one from the day I entered—which latter is now in possession of the Navy department, according to agreement. Nearly all the officers, on the contrary, had ceased keeping journals from the day the order was issued. I should have had some hesitation in submitting myself to that almost absolute power which is the life of the naval service, had I not already known so well the officers of the Susquehanna. My confidence was not misplaced, for from the commodore down, with but a single exception, I received nothing from them but kindness and courtesy during my connection with the service.

I had some difficulty in procuring the necessary uniforms. There were none but Chinese tailors in Shanghae, who work entirely from ready-made patterns. By foraging among the officers I procured a sufficient number of anchor buttons and a crest for my cap; in the shop of a French merchant I found some cloth of the proper color; I borrowed one coat for the sleeves, another for the body, and another for the arrangement of buttons; and by keeping a watchful eye upon the tailor, finally succeeded in obtaining both undress and full-dress uniforms which came within two buttons of being correct. Having assumed the blue, and buttoned my coat up to the throat in order to display the eighteen gilded eagles and anchors which decorated its front I walked down the guns to try its effect. I endeavored to appear careless and self-possessed, but the first man-of-war's-man who passed betrayed me. I know that I actually blushed when he lifted his tarpaulin, and I doubt to this day whether I returned his salute. A little further, a jolly, red-headed tar, with a large cargo of *samshoo* aboard, came up and shook my hand heartily, promising me an oyster supper in New-York after our return. I felt more at home in the service after such a characteristic welcome, and was not afterward embarrassed by my buttons.

The places of acting master's-mates (the rank of warranted master's-mates being now obsolete) had been purposely left vacant, in order that it might be filled by artists and naturalists, who would thus belong to the service and be under the control of its officers. The rank and uniform is that of a passed midshipman, but the pay—twenty-five dollars a month—is considerably less than half of what the latter receives. On the East India station it just about suffices for the payment of the mess bill. There were three master's-mates on board the Mississippi—Mr. Heine, the artist; Mr. Draper, who had charge of the telegraph apparatus; and Mr Brown, daguerreotypist. As they were specially subject to the commodore's orders, they were transferred to the Susquehanna, and I joined them in forming a separate mess, to which was added Mr. Portman, the commodore's interpreter and clerk. The vessel was so crowded, that we had some trouble in finding sufficient room for our mess-table and stores, but were finally placed upon the orlop-deck, beside the main hatch, and over the powder magazine. My cot was slung in the same place at night, where it was brought by a sturdy main-topman, who had it in his particular charge. A cadaverous Chinaman, A-fok by name, was shipped as our steward, and an incorrigible black deck-hand appropriated to us as cook. We were thus provided with all the requisites of a mess, and although there was some grumbling from time to time on account of the heat and darkness of the orlop deck, the incompetency of the steward, or the villany of the cook, I found my situation quite as comfortable as I anticipated, and never regretted having embraced it.

His first experience in his new capacity was the arrival of the squadron at Loo-Choo.

LANDING IN LOO-CHOO.

When the next morning dawned, bright and clear, I thought I had never seen a more lovely landscape than the island presented. The bay was clasped by an amphitheater of gently undulating hills, in some places terraced with waving rice-fields, in others covered with the greenest turf, or dotted with picturesque groups of trees. Bowers of the feathery bamboo—next to the palm, the most graceful of trees—almost concealed the dwellings which nestled together in the little dells opening into the bay, and which, with their stone inclosures and roofs of red tiles, hinted of a much higher civilization than we had expected. The spurs of the hills which run down to the sea terminate in abrupt bluffs, in many places so shattered and irregular as to resemble castles and abbeys in ruins. Beyond and to the right of Capstan Rock, we saw the houses of the town of Napa, with the mouth of a little estuary, wherein some Chinese and Japanese junks were anchored; while on the top of the highest hill, three or four miles inland, one of the bastions of the Regent's castle towered above the trees. The exquisite harmony in the forms of the scene, the dazzling green of the foliage, and the sweet, delicious air which came to us off the shore, charmed us like a glimpse of Paradise, after the monotonous levels and polluted atmosphere of China.

There was no intercourse with the shore until after some negotiations had taken place between the Commodore and the high native dignitaries. The latter came off in rude, flat-bottomed boats, propelled with paddles. They were exceedingly grave and dignified men, dressed in loose robes of grass cloth, and with curious yellow caps on their heads. Both their persons and their garments were scrupulously clean; their long, silky beards were carefully combed out, the particular hairs lying parallel to each other, and everything about them gave evidence of a care and neatness which I have never seen surpassed. They were greatly astonished at the size and strength of the steamer, and when one of the field-pieces was fired three times as a salute, several of the attendants dropped upon the deck from the shock of their surprise.

On the second day after our arrival, when the Commodore had come to a good understanding with the native authorities, he gave the officers of the squadron permission to go ashore. I jumped into the first boat which put off from the Susquehanna, and which happened to be manned by a dozen Chinese, from a number who had been shipped at Shanghae, as deck-hands. The wind was blowing fresh, the sea was running briskly, and the Chinamen who had probably never had an oar in their hands before, did but little but catch crabs and confuse each other. We rapidly drifted away from the vessel and away from the shore, until, finally, one of the midshipmen ordered the coolies to cease, and with the assistance of two or three others, stepped the mast and set the sheet, to run in on the wind. But he did not know the harbor, and in a twinkling of an eye, the boat, which was running at the rate of seven or eight knots dashed upon a coral reef. It was too late to wear off, so we bounced across it, the boat striking upon the tops of the growing coral trees with every wave. Having reached deep water again, we found ourselves in a lake, or pool, completely encircled by the reef. The only means of escape was to jump back again, which we finally accomplished without staving in the boat, and after a wearisome pull, reached the steamer, where we procured a fresh crew, and were finally put ashore at the foot of Capstan Rock.

At this island he was subjected to many whimsical annoyances from the jealousy of the natives, which we must permit him to relate in his own words:

ESPIONAGE IN LOO-CHOO.

The perfection to which the system of espionage is carried in Loo-Choo—and consequently in Japan, for the system is no doubt the same in both countries—is almost incredible. I have no doubt that before the second day of our trip was over, the fact was known throughout the whole island, and watchers were set around every village, to look out for our approach. We were surrounded with a secret power, the tokens of which were invisible, yet which we could not move a step without feeling. We tried every means to elude it, but in vain. The lovely villages with which the island is dotted were deserted at our approach, and the inhabitants so well concealed that we rarely succeeded in finding them. Only the laborers who were at work in the fields were allowed to remain, and even they were obliged to keep at a distance from our path. We changed our course repeatedly, in the endeavor to mislead the spies, but they seemed to comprehend our designs by a species of instinct, and wherever we went they had been before us. We scattered our forces, each one taking a separate course, but the spies were still more numerous than we. We could perceive, however, from the demeanor of the natives, that they were well disposed toward us, and felt a strong curiosity to become acquainted with us; and that it was not so much fear of ourselves, as dread of the power of their rulers, which kept them aloof. I had a great desire to learn something of their social and domestic life, and made frequent efforts to accomplish my object by plunging into the wood from time to time, outstripping the spies, and then darting suddenly into some neighboring village. Although I entered many houses, in two or three instances only did I find the inhabitants within. On my appearance, which must have been very unexpected and startling, the women fell upon their knees, uplifting both hands in an attitude of supplication, while the men prostrated themselves and struck their foreheads upon the earth. I could only assure them by signs of my friendly disposition, and found no difficulty in allaying their apprehensions whenever the spies gave me time enough. On one occasion, where I found two women employed in weaving the coarse cotton cloth of the country, after the first surprise was over, they quietly resumed their occupation.

In other respects, the journey was as agreeable as it was interesting. The island is one of the most beautiful in the world, and contains a greater variety of scenery than I have ever seen within the same extent of territory. The valleys and hillsides are cultivated with a care and assiduity which puts even Chinese agriculture to shame; the hills are crowned with picturesque groves of the Loo Choo pine, a tree which the artist would prize much more highly than the lumberman; the villages are embowered with arching lanes of bamboo, the tops of which interlace and form avenues of perfect shade; while from the deep indentations of both shores the road along the spinal ridge of the island commands the most delightful prospects of bays and green headlands on either side. In the sheltered valleys the clusters of sago palm and banana trees give the landscape the character of the tropics: on the hills, the forests of pine recall the scenery of the Temperate zone. The northern part of the island abounds with marshy thickets and hills overgrown with dense woodland, infested with wild boars, but the southern portion is one vast garden.

The villages all charmed us by the great taste and neatness displayed in their construction. In the largest of them there were buildings called *cung-quas*, erected for the accommodation of the agents of the Government, on their official journeys through the island. They were neat wooden dwellings, with tiled roofs, the floors covered with soft matting, and the walls fitted with sliding screens, so that the whole house could be thrown open or divided into rooms at pleasure. They were surrounded with gardens, inclosed by trim hedges, and were always placed in situations where they commanded the view of a pleasant landscape. These buildings were appropriated to our use, and when, after a hard day's tramp, we had hoisted our flag upon the roof and stretched ourselves to rest upon the soft matting, we would not have exchanged places with the old viceroy himself. As a matter of precaution, we kept regular watches through the night, but the natives also kept a counter-watch upon us. The *cung-qua* was often surrounded with a string of watch-fires; and as the inhabitants seized this opportunity of gratifying their curiosity, we frequently saw hundreds of dusky heads peering at us through the gloom, until the appearance of one of the Government spies scattered them as effectually as if a bomb shell had exploded among them.

In taking leave of his readers, who have followed the traveler in his long and adventurous journey, Bayard Taylor makes a grateful allusion to the kindness and good fortune which have uniformly attended his wanderings over the space of fifty thousand miles. His intercourse with men of every race and clime has strengthened his faith in the innate virtues of human nature, while his personal exemption from disaster has furnished him with new illustrations of the benignant Presence, whose care extends over all lands and seas.